

## **ATTACHMENT C**

English Translation of FR 2673116

## Electronic installation for a golf course

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**Inventor:** HERVE ROBIN; FRANCOIS

**Applicant:** ROBIN HERVE (FR)

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### Abstract of FR2673116

The installation comprises, in particular: . a computer having at least one memory, known as a "central memory", . a plurality of portable objects, . at least one post (1) comprising an information writing unit which is equipped for this purpose with a slot (10) for insertion of a portable object, of a control keyboard (11), and which is connected to a power source, . a station (2-4) comprising an information reading unit which is equipped with a slot for insertion of a portable object, of a control keyboard, and which is connected to a power source, this fixed station being provided beyond the first hole (P) of a golf course, on the trajectory normally followed by the players at the end of a round.



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## ELECTRONIC INSTALLATION FOR A GOLF COURSE

Golf is a sport that does not only comprise carrying on a physical activity but also recording scores,  
5 i.e. to count the points gained and lost in order to progress in a general classification.

The players are more or less motivated by this broad competition but they all are held there, without exception, if they want to be able to attend without  
10 excessive constraints golf of great reputation in the majority of the countries of the world.

The owners, as for them, wish to reconcile two contradictory requirements: to increase the frequentation of their courses and to sort the goods of the bad players,  
15 the experienced players of the initial players.

The players that are beginners and/or lacking good manners annoy the other players because they occupy the "fairways", hence the course itself, for very a long time.

20 Whatever the reason: missed stroke, too short stroke, badly directed stroke, behaviour without-gene, etc, the play are slowed down because it is improper and dangerous to play on a course still occupied by preceding players.

25 Consequently, it is advantageous to the owners and pleasant with the correct players that the fairways at the same time are well attended and released as quickly as possible.

30 Currently, the players must have a classification to take part in more or less difficult competitions but all based on the recording of the accomplished performances.

To this end, the players in competition have a card on which are noted the numbers of strokes that were  
35 required by them to place the ball in the various holes of the course, starting from the corresponding starting lines.

To avoid errors and cheating, it is useful that each player notes the points of another player, and not his own. At the end of the course, the cards are signed by the two players concerned, that which played and that  
5 which noted.

These operations are rather painful and long because they take place in the open air, under difficult conditions to write, and often the not very delicate players are so delayed on the "green" which surrounds the  
10 hole while preventing the players who follow to begin their round.

It results from it from the frictions as much between the players as between the players and the owner of the golf.

15 The present invention makes it possible to simplify these operations complementary to the sport itself and, especially, to accelerate the progression of the players in the incentive to leave the greens as soon as possible.

20 For this purpose, the invention has as an aim an installation located on a golf course and aimed in particular at the calculation of the points obtained by playing each hole, likewise the possible management of the results, in particular in order to establish a  
25 classification, statistics and others, characterized in that it comprises:

- a computer termed a "central computer" located in a room and including at least a memory known as "main memory",
- 30 - a plurality of portable objects, such as charts, intended for the players at a rate of one per player, and each provided with:
  - an electronic memory known as "local memory",
  - at least a station including a unit of writing of  
35 information in main memory and/or local memory,
  - unit which is provided for the purpose with an insertion slit for a transportable object,

- a control cluster, and which is connected to a power source,
- at least a fixed station including a unit of reading information in main memory and/or local memory,
- 5 - unit which is provided for this purpose with an insertion slit for a portable object, of a control cluster and which is connected to a power source, this fixed station being envisaged beyond the last hole, that is to say on the way normally follow-up by the players
- 10 at the end of the part to join a local such as secretariat, cloakroom or other, is in room itself, near the host computer.

According to other characteristics of the invention, the fixed stations consist of terminals placed at the rate of one per the entry of the course of each hole to the exception of that of the first course which is deprived by it;

- the stations are portable;
- the portable stations are provided with bodies of constraint with a carriage of any known type intended for
- 20 the transport of accessories of the play of golf;
- each station includes at least one validation key;
- each station includes a display screen;
- the fixed station located beyond the last hole includes one printer intended to publish a card on which figure the
- 25 score of that of the players whose chart is placed in the insertion slit;
- the installation includes at least a terminal including a slot-machine of objects such as containers of drinks or of food, as well as a unit of reading and/or of writing of
- 30 information in main memory and/or in local memory, unit provided for this purpose with an insertion slit for a portable object, and in addition a control keyboard, in order to ensure the operation of the distributor;
- 35 - the installation includes at least a display board with remote control, connected to the host computer;
- the installation includes an ensuring network of drivers

connection between each terminal and the host computer, network that is connected to a low voltage power supply, each terminal being associated with an amplifier.

The invention will be understood better by  
5 description detailed hereafter made in reference to the annexed drawing. Of course, the description and the drawing are given only by way of indicative and nonrestrictive example.

Figure 1 is a diagram illustrating an  
10 establishment in conformity with the invention but showing only a small part of a golf course.

Figure 2 is a diagrammatic sight showing the general structure of a terminal in conformity with the invention and illustrating an example of display panel as  
15 well as the connections with a host computer.

Figure 3 is a general diagram of a golf course provided with an installation in conformity with the invention.

Figure 4 is a diagrammatic sight showing  
20 association of a portable station in conformity with the invention and of a carriage of the known type.

Figure 5 is a diagrammatic sight with partial cut showing a possibility of constraint of the portable apparatus and carriage of figure 4.

25 Figure 6 is a diagrammatic sight partial in prospect for an alternative of realization according to which the portable apparatus is placed on a handle of traction of a carriage.

Referring on figure 1, there is shown a part of a  
30 golf course which, according to this example, includes buildings A for cloakrooms, offices of the administration of the golf (and in particular a reception and a secretariat), a restaurant etc.

Near these buildings A, the departure B from  
35 where the players launch their ball to put it in the hole C which is spared in the centre of a turfed zone D called "green" and which contains a flag E carrying number 1. The

goal of the play is successively to put the ball in each hole in a minimum of strokes.

To decorate the landscape, to diversify the various parts of the complete course and to make the play  
5 more interesting, one envisages natural or artificial elements which vary largely according to cases: trees F, river G, obstacles such as "bunkers" H, hills, etc. The course between the departure B and the hole C is, according to a mode of realization of the invention,  
10 completely banal whereas the others are not it. Indeed, not far from the hole C and the "green" D but close to the departure J from the following hole, is a station, that will be described in further detail by reference to figure 2, here made up by a terminal fixes 1 and which  
15 corresponds to the first course, namely that of the departure B to the hole C.

Beyond the second hole K, near the departure for the course of the third hole (not represented), is another terminal 1 correspondent with the second course.

20 Thus, each course starting from the second includes a terminal 1 located close to the departure of the following course.

The last course (generally eighteenth), as for him, includes two terminals: a terminal 1 located beyond  
25 the last but one hole M (generally seventeenth) close to departure N and correspondent at this last but one course, and a terminal 2 beyond the last hole P, on the normal way of the players who, having finished their part, leave the last green R to return to buildings A, in particular to  
30 the cloakrooms. Terminal 2 will be described in details further.

All terminals 1 and limits it 2 are connected to a computer 4 located in an office of buildings A and says "host computer".

35 The connection can be of radio operator type, in which case the terminals have a transmitter and an antenna, not represented but schematized by arrow Fl, and

computer 4 a receiver provided with an antenna 4a.

The connection can also be telegraphic: electric cables or optical fibres.

Here, one chose the second solution and one sees  
5 that all terminals 1 and limits it 2 are connected to the host computer 4 by drivers 3.

On the ground, is also at least a dispenser 5 for drinks, confectioneries, food, accessories etc, distributors which are connected to the host computer 4 by  
10 drivers 6.

Close to buildings A, is a display panel of any type known 7 and connected to the host computer 4 by drivers 8.

In addition, the host computer 4 can be connected  
15 to an external organization, such as police headquarters, a sporting federation, a centre of press, etc. as one schematized by the arrow F2.

The operation of the installation which has been just described is as follows.

20 With his arrival, each player applies to the secretariat of the club, in the buildings A, which, by means of an apparatus known in oneself, registered on a smart card of any known type: magnetic tape, microprocessor or other, of information on the player:  
25 direct identification (name, first name, address etc.) or indirect (attribution of a number), handicap, membership of the club or visitor, like any other price of information desired by the club.

The player receives this chart and gains the  
30 departure B to play as usual.

After having put his ball in the hole C, the player leaves the green D and goes close to terminal 1 located close to the departure J.

Terminal 1, as that is seen on figure 2, presents  
35 a slit 10 into which the player introduces his chart, so that the memory of this one is comparison with a device known in oneself (not represented) and allowing the

reading of the information already put in memory as well as the writing of other data, by means of a keyboard 11.

The player introduces his chart (or that of the partner with whom it makes the course) and a message appears on a screen 12, inviting the player to introduce the desired data.

According to the degree of automatism of the installation, the player must or need not indicate the number of the course that he has just finished and, in fact, number 1. One can easily automatically identify the number of each terminal 1 and, consequently, the number of the corresponding hole.

As soon as this first information is recorded, automatically or not, a message appears on screen 12, inviting the player to give the number of strokes which was necessary to the player to put his ball in the hole C since the departure B.

The number given by means of keyboard 11 appears on screen 12 and, in order to be able to correct the possible errors, the keyboard comprises a key 11a marked, for example, letter "C" to mean "correction". When this key 11a is actuated, the number indicated disappears from screen 12 and is not taken into account.

When the number given is exact, the player actuates a key 11b marked, for example, letter "V" to stand for "validation". When this key 11b is actuated, the number indicated is memorized and disappears from screen 12 to leave place with another message which can be a message indicating the end of the operations.

The pieces of information provided by the player may or may not be recorded on the memory of the chart. They are transmitted to computer 4 by line 3.

Then, the other player or each other player introduces his chart and proceeds in the same way and when the last recording is finished, the part continues at the beginning of the following hole, in fact the departure J of the hole number 2.

It is seen that a first advantage of this provision lies in the fact that the players cannot be delayed any more on the green but must, on the contrary, to move as quickly as possible towards the departure following to carry out the recording of the numbers of their strokes. Currently, the players note their numbers on a card and some of them tend to carry out this operation on the green, which obstructs the following players. With the installation that has been just described, one removes completely the disadvantage of cards and it incites the players to approach as fast as possible the following departure, which accelerates the play, to the greatest satisfaction of the owners and even, unconsciously can be, of the players themselves.

This that has just been described with the course number 1, is repeated for all the others, except the last that is described further.

As terminals 1 are placed beyond each green, there is no terminal 1 close to the departure B of the first hole.

In addition to the functional elements 10, 11 and 12, each terminal 1 presents a diagram 13 of the following course, its "par" 14 which is here four and its number 15 which is the fifteen here.

It is noted that the same terminal records the results of a certain course and not described this course but the following.

With the example of figure 2, one sees that the "useful" surface that terminal 1 presents, has a sufficient surface to envisage a panel 16 which can be used for publicity or to place a screen of posting for example.

Terminal 1 being exposed to the bad weather since it is placed outside, one can envisage to protect it very whole by a shelter (not represented) or to protect its delicate elements and mainly slit 10. Keyboard 11, as much for it, can be of a known type according to which it is

completely waterproof. It is the same, of course, for the display screen 12.

5 The host computer 4 receives information of various terminals 1 by drivers 3, the draft according to the desired program and, if necessary, sends data resulting from this information by drivers 8 to the display panels 7 and/or an external organization (arrow F2).

10 It is thus practically in real time that the results of each player are known. The final result of a competition is known as of the acquisition of the results of the last hole and not like currently after the recording of the last card including the complete course of 18 holes.

15 This result of a competition can thus be posted very quickly on panels 7 and to be communicated to Press and/or at an official organization such as the national federation of golf.

20 For the results of the last course (here the number 18), one envisages a special terminal 2 located between the last green and buildings A. It includes also a slit for the introduction of the chart, a keyboard with key of correction and touches validation, a screen display but, moreover, terminal 2 controls a printer (integrated in the same unit or separated) which delivers a pre-printed chart and update starting from the data recorded in main memory and/or local memory. This chart, known as a "score chart" is delivered with each player with various possible pieces of information.

30 The score chart can be used exactly as the card currently filled out with the hand, i.e. it can be signed by two players: that which posted the numbers with each terminal 1 and that to which corresponds the printed score and which actuated, each time, the validation key 11b.

35 The central computer program 4 is established to process the received data of various terminals 1 and 2 in a more or less complex way according to the desires of the

club.

Each terminal 1 has a foot 20 which puts at good height the functional elements 10 to 16 and which is sealed in the ground by means of a concrete 21 stud  
5 presenting two opposite openings 22 and 23 for the passage of drivers 3 and their connection with the electric and electronic whole necessary to functionality of elements 10 to 16.

The diagram of figure 3 shows that one can carry  
10 out the installation in conformity with the invention by trenching only one continuous symbolized by a feature 30, which goes from terminal in terminal and which contains tubes of protection 31 for drivers 3 of type cables telephone traversed by a current with low tension.

15 For this solution, it is necessary to envisage an amplifier at the beginning of each terminal 1 towards the following one, as that is known in oneself.

But one also can, like knows it well the expert, to use optical fibres in the place of drivers 3.

20 On figure 1, one schematized distinct drivers 3 and drivers 6 and having different courses. On figure 3, one represented another solution which consists in grouping a terminal 1 and one terminal 5 at the beginning of certain courses, which makes it possible to simplify  
25 the installation since drivers 3 and drivers 6 then have the same course in same tubes 31 and same trench 30.

Same manner, one can advantageously locate the display panels 7 in the vicinity of trench 30.

Naturally, one can carry out terminals 1, 2 and 5  
30 in any desired material: concrete, synthetic matter, composite materials, etc.

To his return to the secretariat, the player gives his score chart and possibly his smart card. The latter can also be preserved by the player, "to be  
35 swallowed" by terminal 2 or to be given to the secretariat, possibly for an exploitation of the data that contains the local memory.

One can as provide for the stations not having a connection with host computer 4. They are only used to record the data on the chart. Terminal 2 is then the only one connected to the host computer 4 and, after the  
5 recording of the score of the last hole to terminal 2, the results of the complete course, as well as possible other data, are communicated to host computer 4 for processing, memorizing, posting, transmission, etc.

Figure 4 represents a carriage of known type for  
10 a bag S containing the clubs T, balls and other accessories useful for the players.

It includes a needle stem U which is connected to an axle V for wheels W and which presents an operation handle X.

15 With this carriage of the known type, a portable station in conformity can cooperate with the invention 50. It is provided with a writing and/or reading unit for chart 51 having a slit 52, with a keyboard 53 and a display screen 54.

20 Item 50 can be fixed in a removable way to the stem U, close to handle X, thanks to bracelets open 55 to elastic branches, of type known in oneself (only one is represented on figure 5).

Such an item 50 can be carried out according to a  
25 very compactness and thus can, also, being transported in a pocket or a bag, instead of fixing it on the carriage.

The choice between these two solutions is with the range of the expert.

Item 50 can be fed by low-size piles or solar  
30 batteries.

In a simple version, the station is intended to write in local memory according to the same procedure that that indicated higher with terminal 1: introduction of a chart into slit 52, writing by means of keyboard 53,  
35 control by the display screen 54, correction or validation by ad hoc keys.

Figure 6 represents an alternative according to which item 50 is placed on handle X of the needle stem U and is fixed there by all known means.

5 Same elements that those of figure 5 carry the same references.

Slit 52 for the introduction of the charts is then located vis-a-vis at the player who uses the carriage, whereas with the mode of realization of figures 4 and 5, slit 52 is laid out on the side of the carriage.

10 One notices here a solar collector 56 of any known type likely to provide the electric power necessary to the operation of item 50 in order to eliminate the piles which should be changed or the batteries that it is necessary to reload.

15 The provided data can be exploited in different ways:

After having finished his complete course, the player goes in front of terminal 2 or directly to the secretariat. Its chart is read and information in local  
20 memory is transferred in main memory.

Alternatively the station includes a transmitter and the data in main memory are transferred by radio way, this symbolized by the arrow F3.

It arises from the above description that the  
25 invention makes it possible to eliminate the intermediate wastes of time, more quickly to establish the classifications, series per series, calculation of best the performances classified by order, determination of the best and worst stroke, average time on one or more course,  
30 statistics by age, sex of players etc.

The use of a smart card for each player allows also a great flexibility of management of the club by envisaging the reservations and by having a good knowledge of the customers.

35 Naturally, the management of dispensers 5 depends on the club: the distributed products can be offered by the club or companies and organizations external, as they

can be invoiced with the players according to the  
memorized data when they used their chart with each  
selected distributor. In any case, the data collected can  
be used for the inventory control, the compilation of  
5 statistics etc.

CLAIMS

1. Installation located on a golf course and destiny in particular at the calculation of the points obtained by  
5 players at each hole, such as for the possible management of the results, in particular in order to establish a classification, statistics and others, characterized in that it includes:  
a computer called "central computer" (4) placed  
10 in a room (A) and including at least a memory known as "memory power station",  
a plurality of portable objects, such as charts, intended for the players at a rate of one per player, and each provided with an electronic a memory known as "local  
15 memory",  
at least one station (1-50) including a unit of writing information in main memory and/or local memory, unit which is provided for this purpose with an insertion slit (10-52) for a portable object, a control cluster (11-  
20 53), and which is connected to a source of energy, at least one fixed station (2-4) including a unit of reading of information in main memory and/or local memory, unit which is provided for this purpose with an insertion slit for a portable object, of a control cluster and that is  
25 connected to a source of energy, this fixed station being envisaged beyond the last hole (P), that is to say on the way normally followed by the players at the end of the part for to join a room (A) such as secretariat, cloakroom or other, is in the room (A) itself, near the host  
30 computer (4).
2. Installation according to claim 1, characterized in the stations are fixed and consist of terminals (1-2) placed at a rate of one with the entry of the course of  
35 each hole except for that of the first course which is deprived by it.

3. Installation according to claim 1, characterized in that the items (50) are portable.
4. Installation according to claim 3, characterized in that the portable stations (50) are provided with bodies of constraint (55) to a carriage of any known type intended for the transport of accessories of the play of golf.
5. Installation according to claim 1, characterized in that each station (1-2-50) includes at least one validation key (11b).
6. Installation according to claim 1, characterized in that each station (1-2-50) includes a display screen (12-54).
7. Installation according to claim 1, characterized in that the fixed station (2-4) located beyond the last hole (P) includes a printer intended to publish a card on which figure the score of that of the players whose chart is placed in the insertion slit.
8. Installation according to claim 1, characterized in that it includes at least a terminal (5) including a slot-machine of objects such as drink containers or food, as well as a unit of reading and/or writing of information in main memory and/or local memory, unit provided for this purpose of an insertion slit for a portable object, and in addition a control cluster, in order to ensure the operation of the distributor.
9. Installation according to claim 1, characterized in that it includes at least a remote control display board (7), connected to the host computer (4).
10. Installation according to claim 1, characterized in

that it includes a network of drivers (3-6) ensuring the  
connection between each terminal (1-2-5) and the host  
computer (4), network which is connected to a power supply  
in low tension, each terminal (1) being associated an  
5 amplifier.